system in the production line." Claim 8, which depends from claim 1, recites "providing a second reference value of a second performance characteristic correlated with satisfactory performance of a reference electrostatic chuck when placed in the second vacuum chamber of the semiconductor processing system in the production line and operated under standard conditions of operation." Applicants respectfully disagree with the rejection and request reconsideration in this regard.

The recitation in dependent claim 8 does not cause the recitation in claim 1 to be unclear. Specifically, the specific language identified by the Examiner in claim 1 relates to the electrostatic chuck and the specific language identified by the Examiner in claim 8 relates to the reference electrostatic chuck. Claim 1 does not recite that the electrostatic chuck is installed in the second vacuum chamber. In contrast, the performance of the reference electrostatic chuck was determined when the reference electrostatic chuck was installed in the second vacuum chamber. Claim 1 requires that, while the reference electrostatic chuck was installed in the second vacuum chamber, a first reference value was measured. Dependent claim 8 requires that, when the reference electrostatic chuck was installed in the second vacuum chamber, a second reference value was measured. The reference electrostatic chuck must obviously be removed from the second vacuum chamber before the electrostatic chuck is installed, if the electrostatic chuck is ever installed in the second vacuum chamber.

Similar arguments apply to the remaining claims and, in particular, to claims 12, 18, 25 and 32. Hence, Applicants respectfully request that the rejection be withdrawn.

Rejections of Claims Under 35 U.S.C. § 103

Claims 1-11, 18, 20, 23 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuse et al. (U.S. Patent No. 5,951,772) in view of Dahimene et al. (U.S. Patent No. 6,198,616). Applicants respectfully traverse the rejection for the reasons set forth below.

The primary reference, Matsuse et al., is not concerned with characterizing the performance of an electrostatic chuck. In fact, Applicants can find absolutely no teaching or disclosure in Matsuse et al. that relates to evaluating the performance of an electrostatic chuck. Moreover, the secondary reference, Dahimene et al., is neither concerned with nor contemplates characterizing the performance of an electrostatic chuck in a vacuum chamber before the electrostatic chuck is installed in a different vacuum chamber of a production line. Although Dahimene et al. does address optimizing the chucking voltage, this reference does not contemplate characterizing the performance of an electrostatic chuck before the electrostatic chuck is installed in a vacuum chamber of a production line. In other words, neither reference applied by the Examiner contains a suggestion or motivation for, based upon a comparison of the performance of an electrostatic chuck in a first vacuum chamber with the performance of a reference electrostatic chuck, determining whether the performance of the electrostatic chuck is adequate to install the electrostatic chuck in the second vacuum chamber. Neither reference recognizes any benefit of determining the performance of a chuck in a vacuum chamber before the chuck is installed in a different vacuum chamber in a production line. Hence, one of ordinary skill in the art would not combine Matsuse et al. with Dahimene et al. based upon the teachings of these references.

The Examiner's rationale is that "measuring, collecting and comparing performance data would have allowed the skilled artisan to achieve constant desired results and optimal chucking for a particular wafer type and/or process (see Dahimene, column 5 lines 25-30)." This reference in Dahimene et al. relates to determining optimal chucking conditions for each wafer among a batch of wafers of a particular type or for each wafer among a batch of wafers subjected to a particular process. The determination of the optimal chucking conditions presumably occurs in a vacuum chamber already in a production line, as the disclosure in Dahimene et al. does not contradict this presumption. However, the Examiner's rationale does not provide any suggestion or motivation to combine these two references for evaluating the performance of an electrostatic chuck to determine whether the performance of the electrostatic chuck is adequate to install the chuck in a chamber in a production line, as recited in claim 1. Applicants are not determining optimal chucking conditions for a particular wafer type or process. Because the Examiner has failed to provide an appropriate suggestion or motivation to combine these references, the Examiner has failed to support a *prima facie* case of obviousness. For at least this reason, Applicants submit that claim 1 is patentable and that the rejection of claim 1 should be withdrawn.

Assuming, *arguendo*, that one combined the teachings of Matsuse et al. with the teachings of Dahimene et al., the resulting method would not include all the elements of the method of claim 1. The Examiner contends that Figure 3 and column 12, lines 6-15 of Matsuse et al. teaches "a method of characterizing the performance of an electrostatic chuck in a first vacuum chamber for use in a second vacuum chamber of a semiconductor processing system in a production line." The passage relied upon by the Examiner describes the movement of wafers

between process chambers in a cluster tool. The passage relied upon by the Examiner does not describe evaluating chuck performance.

The Examiner further contends that column 12, lines 31-42 of Matsuse et al. teaches "positioning the electrostatic chuck within the first vacuum chamber." However, Applicants cannot find a description in this passage relating to positioning an electrostatic chuck in a vacuum chamber. Instead, the passage refers to moving wafers among vacuum chambers.

The Examiner further contends that column 12, lines 31-42 of Matsuse et al. teaches, "based on the result of the comparing step, determining whether the performance of the electrostatic chuck is adequate to install the electrostatic chuck in the second vacuum chamber of the semiconductor processing system in the production line." However, the Examiner has improperly construed the passage from Matsuse et al., which merely teaches transferring wafers between vacuum chambers of a cluster tool as mentioned above. This disclosure bears no rationale relationship with performance determination of an electrostatic chuck and, hence, cannot teach determining chuck performance as claimed.

The Examiner also contends that column 7, line 63 - column 8, line 12 of Dahimene et al. teaches "providing a first reference value of a first performance characteristic correlated with satisfactory performance of a reference electrostatic chuck when placed in the second vacuum chamber of the semiconductor processing system in the production line and operated under standard conditions of operation (see Dahimene, column 7 line 63)." Applicants submit that this passage from Dahimene et al. teaches a variable high voltage power supply for supplying power to an electrostatic chuck. However, this cited passage does <u>not</u> teach that a

reference value of a performance characteristic of a reference electrostatic chuck is determined for any purpose, much less a subsequent comparison with another electrostatic chuck.

The Examiner contends that column 7, line 63 - column 8, line 12 of Dahimene et al. teaches "comparing the first measured value of the first performance characteristic with the first reference value, the comparison providing an indication of the performance of the electrostatic chuck." Applicants cannot find any teaching of comparing a measured value of a performance characteristic of an electrostatic chuck with a reference value of a distinct reference electrostatic chuck in the passage of Dahimene et al. relied upon by the Examiner or in any other passage of Dahimene et al. As remarked above, the cited passage in Dahimene et al. merely teaches a variable high voltage power supply capable of supplying variable power to a single electrostatic chuck.

Thus, even if the two references were combined as suggested by the Examiner, the resulting method taught by the combined teachings of Matsuse et al. and Dahimene et al. would not include every element of claim 1. For at least this reason, Applicants submit that claim 1 is patentable and request that the rejection be withdrawn.

Because claims 2-11 depend from independent claim 1, Applicants submit that these claims are also patentable for at least the same reasons discussed above. Furthermore, these claims recite unique combinations of elements not taught, disclosed or suggested by the combination of Matsuse et al. with Dahimene et al.

Independent claim 18 is patentable for at least the same reasons as claim 1. Accordingly, Applicants incorporate by reference the discussion provided above with respect to

claim 1. For at least this reason, Applicants submit that claim 18 is patentable and request that the rejection be withdrawn.

Because claims 19, 20, 23 and 24 depend from independent claim 18, Applicants submit that these claims are also patentable for at least the same reasons discussed above. Furthermore, these claims recite unique combinations of elements not taught, disclosed or suggested by the combination of Matsuse et al. with Dahimene et al.

Claims 12-14, 16 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuse et al. and Dahimene et al. in view of Collins et al. (U.S. Patent No. 6,252,354). Applicants incorporate by reference the discussion provided above with respect to independent claims 1 and 18. Moreover, Collins et al. fails to cure the deficiencies of the Matsuse et al. and Dahimene et al. references. As the Examiner has failed to support a *prima facie* case of obviousness, Applicants submit that independent claim 12, and claims 13, 14, 16 and 17 depending therefrom, are patentable for at least the same reasons as claim 1. Furthermore, these claims recite unique combinations of elements not taught, disclosed or suggested by the combination of Matsuse et al., Dahimene et al. and Collins et al.

Claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuse et al., Dahimene et al. and Collins et al. further in view of Shamouilian et al. (U.S. Patent No. 6,095,084). Applicants incorporate by reference the discussion provided above with respect to independent claims 1, 12 and 18. Moreover, Shamouilian et al. fails to cure the deficiencies of the Matsuse et al., Dahimene et al. and Collins et al. references. As the Examiner has failed to support a *prima facie* case of obviousness, Applicants submit that dependent claim 15 is patentable for at least the same reasons as independent claim 12 from which it depends.

Furthermore, this claim recites a unique combination of elements not taught, disclosed or suggested by the combination of Matsuse et al., Dahimene et al., and Collins et al. with Shamouilian et al.

Claim 16 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuse et al. and Dahimene et al. further in view of Ishikawa et al. (U.S. Patent No. 5,382,311). Applicants incorporate by reference the discussion provided above with respect to independent claims 1, 12 and 18. Moreover, Ishikawa et al. fails to cure the deficiencies of the Matsuse et al. and Dahimene et al. references. As the Examiner has failed to support a *prima facie* case of obviousness, Applicants submit that dependent claim 16 is patentable for at least the same reasons as independent claim 12 from which it depends. Furthermore, this claim recites a unique combination of elements not taught, disclosed or suggested by the combination of Matsuse et al. and Dahimene et al. with Ishikawa et al.

Claims 21, 22, 25-29 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuse et al. and Dahimene et al. in view of Shamouilian et al. Applicants incorporate by reference the discussion provided above with respect to independent claims 1, 12 and 18. Therefore, claims 21 and 22, which depend from a patentable claim 18, are patentable. Moreover, Shamouilian et al. fails to cure the deficiencies of the Matsuse et al. and Dahimene et al. references. As the Examiner has failed to support a *prima facie* case of obviousness, Applicants submit that independent claim 25, and claims 26-29 and 31 depending therefrom, are patentable for at least the same reasons as claim 1. Furthermore, claims 21, 22, 25-29 and 31 recite unique combinations of elements not taught, disclosed or suggested by the combination of Matsuse et al., Dahimene et al. and Shamouilian et al.

Claim 30 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuse et al., Dahimene et al. and Shamouilian et al. further in view of Hashimoto et al. (U.S. Patent No. 5,779,925). Applicants incorporate by reference the discussion provided above with respect to independent claims 1, 12, 18 and 25. Moreover, Hashimoto et al. fails to cure the deficiencies of the Matsuse et al., Dahimene et al. and Shamouilian et al. references. As the Examiner has failed to support a *prima facie* case of obviousness, Applicants submit that dependent claim 30 is patentable for at least the same reasons as independent claim 25 from which it depends. Furthermore, claim 30 recites a unique combination of elements not taught, disclosed or suggested by the combination of Matsuse et al., Dahimene et al., Shamouilian et al. and Hashimoto et al.

Claims 32-41 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuse et al. and Dahimene et al. further in view of Davenport et al. (U.S. Patent No. 6,509,069). Applicants incorporate by reference the discussion provided above with respect to independent claims 1, 12, 18 and 25. Moreover, Davenport et al. fails to cure the deficiencies of the Matsuse et al. and Dahimene et al. references. As the Examiner has failed to support a *prima facie* case of obviousness, Applicants submit that independent claim 32, and claims 33-41 depending therefrom, are patentable for at least the same reasons as claims 1, 12, 18 and 25. Furthermore, these claims recite unique combinations of elements not taught, disclosed or suggested by the combination of Matsuse et al., Dahimene et al. and Davenport et al.

Moreover, Davenport et al. is not even related to determining the performance of an electrostatic chuck based upon a temperature profile, as required in claims 31-42. Instead, Davenport et al. relates to a temperature profile for brazing two materials together, which is